

Application No. 10/026,019
Reply to Office Action mailed September 9, 2005

REMARKS

The present Amendment is in response to the Examiner's Office Action mailed September 9, 2005. Claims 1-3, 5-7, 9, 14-16, 18, 21-29, and 31-34 were pending. Claim 1 is cancelled, and claims 2, 3, 5, 6, and 14 are amended. Claims 2-3, 5-7, 9, 14-16, 18, 21-29, and 31-34 are now pending in view of the above amendments.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicant's request that the Examiner carefully review any references discussed below to ensure that Applicant's understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

I. ACTIONS ON THE MERITS

A. Rejection Under 35 U.S.C. §102

The Office Action rejects claims 1, 2, 14, and 15 under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,642,070 to Jiang, *et al.* ("Jiang"). However, Jiang -- assuming *arguendo* that it and the other references cited herein qualify as prior art -- fails to

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teach each and every element of the pending claims and thus does not anticipate the present claimed invention as amended herein.

In particular, Applicant notes that claim 1 has been cancelled and that pending claims 2-9 and 14-18 have been rewritten as needed to depend upon independent claim 34, which claim was allowed in the Office Action. As such, the rejection of claims 2, 14, and 15 are now considered moot in view of these amendments. Removal of the rejections under Section 102 in view of *Jiang* and corresponding allowance of these claims are therefore respectfully solicited.

B. Rejections Under 35 U.S.C. §103

The Office Action rejects claims 3, 9, 16, and 18 under 35 U.S.C. § 103(a) as being unpatentable over *Jiang* in view of U.S. Patent No. 6,567,448 to Sun, *et al.* ("*Sun*"). Claims 5-7 are rejected under Section 103 as being unpatentable over *Jiang* in view of U.S. Patent No. 6,046,096 to Ouchi ("*Ouchi*"). Also, claims 21-25 and 27-28 are rejected under Section 103(a) as being unpatentable over *Ouchi* in view of *Sun*. Finally, claims 29 and 32 are rejected under Section 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0179792 to Riechert, *et al.* ("*Riechert*") in view of *Sun*. However, because the cited references fail to teach or obviously suggest each and every element of the pending claims cited above, Applicant traverses the rejections in view of the above amendments and following remarks.

With respect to claims 3, 5-7, 9, 16, and 18, Applicant notes that each of these claims is allowable by virtue of its dependence on amended independent claim 34, which as described below is considered allowable by the Examiner. Applicant therefore solicits the removal of the rejection to these claims under Section 103.

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With respect to independent claims 21, 24, and 28, the invention as embodied in these claims is substantially distinct from a device taught or suggested by *Ouchi* and *Sun*. In particular, these independent claims require confinement layers -- specifically Aluminum Gallium Arsenide ("AlGaAs") confinement layers -- sandwiching an active region of a vertical cavity surface emitting laser. Neither *Ouchi* nor *Sun* teach or suggest such confinement layers. Indeed, the Office Action explicitly admits on page 4 that *Ouchi* fails to teach AlGaAs confinement layers sandwiching an active region.

Similarly, *Sun* also fails to teach at least this limitation, despite what is purported in the Office Action. In particular, page 4 of the Office Action alleges that *Sun* teaches AlGaAs confinement layers sandwiching an active region. However, this is not so. In contrast, *Sun* actually teaches confinement layers that themselves *are part of* the active region. This is clearly seen in column 3, lines 52-53 of *Sun*, which states that "active layer 64 is a quantum well layer sandwiched by AlGaAs potential confinement layers...." Thus, the confinement layers of *Sun* do not sandwich its active region, but rather *form part of* the active region itself. As such, the teachings of *Sun* fail to describe or suggest confinement layers sandwiching an active region, as suggested in the Office Action. Therefore, even a combination of *Ouchi* and *Sun* fails to teach confinement layers sandwiching an active region, as is explicitly required in independent claims 21, 24, and 28.

In consequence of the above discussion, Applicant therefore submits that the cited references, either alone or in combination, fail to teach each and every element of independent claims 21, 24, and 28. Thus, the Office Action fails to make out a *prima facie* case of obviousness with respect to these claims. Further, inasmuch as claims 22-23 and 25-27 are

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variously dependent on one of claims 21 and 24, they are also allowable for at least the reasons given above.

With respect to the rejection of independent claims 29 and 32, Applicant also traverses this rejection for the failure of the cited references to teach or obviously suggest each and every element of these claims.

In particular, claims 29 and 32 each require, in a vortical cavity surface emitting laser, AlGaAs confinement layers that sandwich an active region. Neither *Riechert* nor *Sun*, which are purported in the Office Action to teach all of the elements of these claims, teach or suggest such confinement layers. Indeed, the Office Action explicitly admits on page 5 that *Riechert* fails to disclose AlGaAs confinement layers sandwiching an active region.

Similarly, *Sun* also fails to teach this limitation, despite what is purported in the Office Action. As was discussed above in connection with the rejection of independent claims 21, 24, and 28, *Sun* does not teach confinement layers sandwiching an active region, but rather teaches confinement layers that are themselves *part of* the active region itself. As such, neither *Riechert* nor *Sun* teach confinement layers that sandwich an active region. Applicant therefore submits that *Riechert* and *Sun*, either alone or in combination, fail to teach each and every element of independent claims 29 and 32, and thus the Office Action fails to make out a *prima facie* case of obviousness with respect to these claims. These claims are therefore allowable for at least the reason given above.

II. Allowed Subject Matter

Applicant wishes to thank the Examiner for allowance of claims 30, 33, and 34.

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Applicant submits the following comments concerning the Examiner's statements of reasons for the indication of allowable subject matter in the Office Action. Applicant agrees with the Examiner that the claimed invention of claims 30, 33, and 34 is patentable over the prior art, but respectfully disagrees with the Examiner's statement of reasons for allowance as set forth in Office Action. Applicant submits that it is the claim as a whole, rather than any particular limitation, that makes each of the claims allowable. No single limitation should be construed as the reason for allowance of a claim because it is each of the elements of the claim that makes it allowable. Therefore, Applicant does not concede that the reasons for allowable subject matter given by the Examiner are the only reasons that make, or would make, the claims allowable and does not make any admission or concession concerning the Examiner's statement in the Office Action.

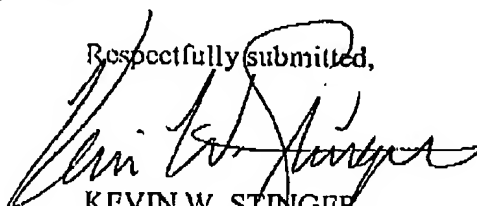
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CONCLUSION

In view of the foregoing, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 9th day of January, 2006.

Respectfully submitted,



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